

REMARKS

In the Specification

The specification was objected to as failing to provide proper antecedent basis for the claimed subject matter. 37 CFR 1.75(d)(1) and MPEP § 608.01(o). “If one employs means plus function language in a claim, one must set forth in the specification an adequate disclosure showing what is meant by that language.” *In re Donaldson Co.*, 16 F.3d 1189, 1195 (Fed. Cir. 1994) (in banc); MPEP 2181(II). Examiner particularly objected to applicant’s use of canard means, propulsion means, means for rotating, zero-twist rifling, guide means, internal control means, and means for setting the azimuth. Applicant respectfully traverses this objection and submits that the amendments to the specification and claims make the specification unobjectionable.

First, applicant notes that claims 44 and 47 through 53 have been amended to reference a countermeasure cartridge instead of either a decoy cartridge or a cartridge. The terms “countermeasure” and “decoy” are synonymous to those skilled in the art; however, the phrase “countermeasure cartridge” is used throughout the specification. Additionally, Applicant has deleted the word “carrying” from claim 44 which now reads “countermeasure cartridge” and added new dependent claim 54 which relates to a countermeasure cartridge containing and releasing or deploying decoys. Claim 54 adds no new matter because the specification discloses a countermeasure cartridge which contains and releases or deploys decoys. [p.16, ll. 14 through 21.] These changes make the terminology in the specification and the claims consistent.

Applicant will address each of Examiner’s particular objections individually.

Canard Means

Examiner objects to applicant's use of the phrase "canard means" in the claims; however, applicant previously amended claims 44 and 48 to simply state "canard." "A claim element that does not include the phrase 'means for' or 'step for' will not be considered to invoke 35 U.S.C. § 116 sixth paragraph." *Watts v. XL Systems, Inc.*, 232 F.3d 877 (Fed.Cir. 2000); MPEP 2181(I). As amended, these claims no longer contain means-plus-function language; therefore, 35 U.S.C. § 112 sixth paragraph does not apply and the objection is improper.

Propulsion Means

Examiner objects to applicant's use of the phrase "propulsion means" in the claims; however, 35 U.S.C. § 112 sixth paragraph does not apply when the claim limitation itself recites sufficient acts for performing the specific function. *See Cole v. Kimberly-Clark Corp.*, 102 F.3d 524, 531 (Fed. Cir. 1996)(Holding "perforation means for tearing" does not invoke 35 U.S.C. § 112 sixth paragraph because the claim describes the structure supporting the tearing function (i.e. perforation); MPEP 2181(I). Here, claim 44 recites a "propulsion means for launching." As in *Cole*, the claim limitation recites sufficient acts for performing the specific function, i.e. the launching is done by means of propulsion; therefore, the element is not a means-plus-function limitation.

Further, even if the element were a means-plus-function limitation, there is an adequate disclosure in the specification defining the function. The specification has been amended to change "propulsion module" to "propulsion means." This amendment adds no new matter. The words module and means are synonymous here. They both describe a functional way to propel the countermeasure cartridge. The countermeasure cartridge is described in the specification at page 15, lines 16 through 17 as including at least one propulsion means for

example a “rocket motor, impulse assembly, mortar assembly, and/or the like.” This language in the specification adequately discloses what is meant by “propulsion means;” therefore, the objection is improper.

Means for Rotating

Examiner objects to applicant’s use of the phrase “means for rotating” in the claims. Similarly, there is an adequate disclosure in the specification defining “means for rotating.” At page 13, lines 12 through 19, applicant describes a servo motor and “any appropriate mechanism(s) capable of providing rotational movement” to the launch tube. This description continues through the next page at lines 5 through 7 where applicant describes the capability of the launch tube to rotate relative to the base due to the servo motor. This language in the specification adequately discloses what is meant by “means for rotating;” therefore, the objection is improper.

Zero-twist Rifling

Examiner objects to applicant’s use of the phrase “zero-twist rifling” in the claims. The phrase “zero-twist rifling” does not appear in the claims. The objection is based on the requirement that every term used in the claims be supported in the specification. The term “zero twist” is used in the claims and is described in the specification on page 23, lines 1 through 13 as “zero-twist rifling.” Because the claim language is clear and adequately supported by the specification, the objection should be withdrawn.

Guide Means

Examiner objects to applicant’s use of the phrase “guide means” in the claims. Applicant amended the claims and removed the phrase “guide means.” With respect to the countermeasure cartridge, the phrase is replaced with “guide key” which is described in the specification at page 20, line 12 as a “protrusion, projection, outcropping, or the like.” With

respect to the launch tube, the phrase is replaced with “keyway” which is described at page 20, line 13 as a “groove, channel, or the like.” Applicant submits that with this amendment, the terms in the claims are adequately supported by the specification; therefore, the specification is no longer objectionable and the objection should be withdrawn.

Internal Control Means

Examiner objects to applicant’s use of the phrase “internal control means” in the claims. Applicant refers to a control module on page 17, lines 14 through 16. The specification is amended and now describes an “internal control means” which includes “an appropriate microprocessor unit, one or more appropriate canard control modules, and at least one timing device.” This amendment adds no new matter. Means is synonymous with module in this case because both are used to describe the internal components which allow the countermeasure controls to function. This language in the specification adequately discloses what is meant by “internal control means”; therefore, the specification is no longer objectionable.

Means for Setting the Azimuth

Examiner objects to Applicant’s use of the phrase “means for setting the azimuth” in the claims. The term “means for setting the azimuth” appeared in claim 45 which was previously cancelled; therefore, Examiner’s objection is improper.

In the Claims

Examiner objects to the limitation “the respective guide means of the tube” in claim 44 due to insufficient antecedent basis. Applicant has amended this claim and removed the phrase and all references to a “guide means.” Applicant respectfully submits that claim 44 as amended is allowable.

Examiner rejected claims 44 and 46 through 53 under 35 U.S.C. 103(a) as being unpatentable over Becker (U.S. Patent 4,662,265), Gassler (U.S. Patent 4,681,015), Grosso (U.S.

Patent 5,425,514), and Finkelstein (U.S. Patent 3,245,318). Applicant respectfully traverses this rejection because none of the prior art references disclose or suggest a combination of references or suggest all the claim limitations. “To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” MPEP 706.02(j). A *prima facie* case of obviousness has not been made and Applicant respectfully requests that the rejection of these claims be withdrawn. Applicant incorporates the arguments from his response mailed November 22, 2005 and offers the following remarks to supplement that response and to address Examiner’s March 2, 2006 office action.

Independent claim 44 teaches a countermeasure system for vertically launching a countermeasure carrying cartridge *trained only in azimuth*. It further teaches a system which allows a launch free from rotational axial movement *during the launch*. Thus the countermeasure cartridge remains trained in azimuth throughout the launch sequence. Examiner acknowledges that neither Becker nor Gassler “expressly disclose the protrusion and groove design as a zero twist longitudinal guide to effect non-rotational axial movement throughout a substantial portion of the launch.” Examiner points to Finkelstein as suggesting, in combination with Becker and Gassler, a system that prevents rotation of a missile during the launching stage.

Finkelstein discloses a missile launcher with guide rails and a guide track that prevent rotation of the missile during the launch stage. [col. 3, ll. 35-45.] However, in Finkelstein, the missile rotation is undesirable because of the potential damage to the exiting

missile (such as to the fins). Finkelstein does not disclose any mechanism to control, steer, or otherwise set the flight path of the missile. The zero-twist launch feature is solely to keep the missile oriented correctly in the launcher during the launch phase. Applicant claims a countermeasure system where the countermeasure cartridge is free from rotation during the launch so that the cartridge will remain *trained in azimuth* and, as a result, the flight path of the missile is unaltered. The disclosure of guide rails and tracks to protect the missile during launch in Finkelstein does not suggest the limitation in the current application related to controlling the flight path of the missile.

Similarly, neither Becker nor Gassler teach or suggest such limitation. Becker discloses a launch system which can be oriented in any direction. Gassler teaches a system for preventing rotation of a missile during *loading*. There is no suggestion or motivation in the combination of Becker, Gassler, and Finkelstein for a vertically launched cartridge that remains trained in azimuth during the launch phase.

Examiner admits that neither Finkelstein, Becker, or Gassler disclose a countermeasure cartridge with a canard and a control means, but states that Grosso does teach these limitations. Applicant respectfully disagrees. Applicant's invention relates to a vertically staged missile, particularly for launching a countermeasure cartridge, for evasion purposes. The vertical launch missile of Applicant's invention omits many of the onboard control systems that other missiles utilize to control flight path, such as Grosso, which is a *spin stabilized projectile* guidance system. The operational features of Grosso are unrelated to Applicant's invention. Grosso is directed to a controlled projectile for launch and increased maneuverability through sensing various spin characteristics, nutation frequency and precession frequency, a torquer assembly for developing a force in a lateral direction. Grosso is directed to sensing the operating

parameters of a spin stabilized projectile and other than mentioning a canard, has no relevance to the present invention.

Neither Becker, Gassler, Finkelstein, or Grosso disclose the current invention, nor do they suggest a motivation to combine their teachings. Because the cited prior art does not suggest all of the limitations in Claim 44, a *prima facie* case of obviousness has not been made and Applicant respectfully requests that the rejection of these claims be withdrawn.

Claims 46 through 53 are dependent claims which include all the limitations of claim 44. Applicant respectfully submits that these claims are not obvious for the same reasons that claim 44 is not obvious and the claims are allowable. Additionally, dependent claims 51, 52 and 53 teach control systems which activate the canard, thrusters, or stabilize the cartridge by controlling roll, pitch or yaw after launch. One feature of Applicant's invention is the simplicity and low cost of the control system. [p.19, ll. 6 - 19.] Grosso discloses a complex control system for spin stabilized projectile guidance and does not suggest the current invention. Dependent claims 46 through 53 should be allowed.

Accordingly, Applicant believes that the Application is now in suitable form for allowance and that the rejection of the Examiner based upon the cited references has been overcome. Reconsideration by the Examiner is respectfully requested and a Notice of Allowance solicited.

If the Examiner feels that a telephone conference with Applicant's attorney would advance the prosecution of the application, she is invited to call the undersigned at 502-562-7319.

Respectfully submitted,



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CERTIFICATE UNDER 37 CFR 1.8(a)

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